

## **PERMITTING GUIDANCE FOR GAS AND DIESEL FIRED GENERATORS OPERATING IN COAL BED METHANE (CBM) SERVICE IN THE NORTHEAST PART OF THE STATE**

**October 1, 2009**

**This guidance replaces, in whole, the previous October 15, 2001 permitting guidance for gas, natural and CBM field, and diesel fired generators operating in CBM service in the northeast part of the State and applies to both new equipment and existing equipment.**

### **Overview of CBM Permitting Guidance**

Beginning in December of 2000, the Wyoming Department of Environmental Quality, Division of Air Quality has been working on the permitting issues surrounding portable generators used for temporary power generation for CBM well sites. The first formal permitting guidance was presented before the Air Quality Advisory Board on October 9, 2001, for discussion. On October 15, 2001, the guidance was implemented for an eight (8) county region (i.e., Sheridan, Johnson, Campbell, Crook, Weston, Niobrara, Converse, and Natrona Counties) in the northeast portion of the State of Wyoming.

Over the last seven (7) years the Division continued to develop a better understanding of portable power generation for CBM well sites. While there are still unanswered questions regarding the impact of portable generators on existing air resources, the Division is taking significant steps to revise the original October 15, 2001 permitting guidance to reflect current industrial practices, while protecting the existing air quality in the northeast portion of the State.

Since issuance of the October 15, 2001 permitting guidance, there have been no changes except for the application of Best Available Control Technology (BACT) as discussed in the guidance. Over the past seven (7) years potential nitrogen oxides (NO<sub>x</sub>) emissions, carbon monoxide (CO) and particulate matter (PM) emissions from the diesel engines have been reduced through the application of EPA's Tier emission standards as part of BACT. Beginning in 2001, Tier 1 was implemented as BACT and NO<sub>x</sub> emissions from new engines were reduced from previous levels of over 14 grams/horsepower-hour (g/hp-hr) to approximately 6.9 g/hp-hr, depending on engine size. In the December 2005 waiver extension letter companies were informed of the implementation of Tier 2 as BACT beginning July 1, 2006. All new engines authorized after July 1, 2006, were required to meet Tier 2 NO<sub>x</sub> levels of 4.9 g/hp-hr as BACT.

The Division continually reviews the state of the art control levels from diesel fired engines used for CBM well sites. Starting in 2006, for certain sized engines, EPA established Tier 3 emissions levels. The last of the Tier 3 levels went into effect in 2008. Since 2006 when Tier 3 was first implemented, the Division has encouraged companies to purchase new Tier 3 engines where available. Considering the improved availability of Tier 3 engines, the Division requires at least Tier 3 compliant diesel generators (engines greater than 50 hp but less than 750 hp) for new units, or units which are initially authorized under the portable generator waiver process, beginning January 1, 2009. On June 29, 2004, the **Control of Emissions of Air Pollution From Nonroad Diesel Engines and Fuel; Final Rule** (FR Vol. 69, No. 124, pages 38957-39273) was published by EPA establishing Tier 4 emission levels from new diesel engines, including those used to power CBM well sites. The final implementation of Tier 4 emission levels is scheduled for 2014. The Division will continue to address emissions reductions through the application of BACT as part of the waiver process.

## **CBM Permitting Guidance Requirements**

### **General Requirements**

- Applicants are required to use the most current application forms available when submitting an application to waive new generators. The Division may revise the portable generator waiver application form(s) at future dates.
- Changes of ownership for generators shall be handled through the Division's waiver process. A new application number will be assigned to each requested ownership change, the company acquiring the new equipment will be billed at the prevailing rate for the Division's time processing the request, and a new waiver will be issued to the acquiring company.

### **Existing Diesel Fired or Dual-Fuel Diesel Fired Generators**

Existing generators with a valid air quality portable diesel generator waivers issued prior to October 1, 2009, are authorized to continue operating in the eight (8) county area upon issuance of a new portable diesel generator waiver incorporating the requirements below.

- New portable diesel generator waivers for existing equipment will not have an expiration date.
- Existing diesel fired generator engines, Tier 2, Tier 1, Tier 0, including flex engines authorized under the Transition Provisions for Equipment Manufacturers (TPEM) listed in 40 C.F.R. §89.102, are limited to twelve (12) months of operation at any location without relocating. Operation beyond twelve (12) months subjects the unit to additional requirements under Chapter 6, Section 2 of the WAQSR. In order to continue operating beyond the allotted twelve (12) month time frame, a WAQSR Chapter 6, Section 2 air quality permit must be issued before the affected unit is on location for more than twelve (12) months.
- Existing diesel fired generator engines, 400 horsepower or less, certified Tier 3 or Tier 4, excluding flex engines authorized under TPEM, may operate with no time limitation at any location in the eight (8) county area.
- Upon removal from inventory or retirement of an existing engine, the company shall notify the Division within fifteen (15) days that the unit will no longer be operated.

### **New Diesel Fired or Dual-Fuel Diesel Fired Generators**

- New diesel fired generators authorized after October 1, 2009, shall meet current BACT-determined emission levels, which are typically the applicable EPA Tier emission levels, in order to receive a new portable diesel fired generator waiver.
- Documentation verifying the Tier certification for each new generator will be submitted with each portable diesel generator waiver application.

- The Division's assigned ID number shall be clearly posted on each generator within thirty (30) days of the issuance of each waiver.
- New diesel fired generators greater than 750 horsepower will be evaluated on a case-by-case basis.
- New diesel fired generator engines less than 750 horsepower and above 400 horsepower are limited to twelve (12) months of operation at any location. In order to continue operating beyond the allotted twelve (12) month time frame granted in the portable diesel waiver, a WAQSR Chapter 6, Section 2 air quality permit must be issued before a unit is on location for more than twelve (12) months.
- New diesel fired generator engines 400 horsepower or less, certified Tier 3 or equivalent emissions or Tier 4, excluding flex engines authorized under TPPEM, may operate more than twelve (12) months at any location in the eight county area **without** obtaining a WAQSR Chapter 6, Section 2 air quality permit in addition to the portable diesel generator waiver.
- Every installation and relocation of a portable diesel fired generator in the northeast portion of the State authorized by a portable diesel generator waiver shall be entered and tracked in the online **Portable Generator Reporting System** (<http://deg.state.wy.us/pgras/>). The information from each relocation shall be filled out online within five (5) working days of the end of operation.
- At least one (1) diesel fired generator of each model will be initially tested to determine NO<sub>x</sub> and CO emissions within sixty (60) days of waiver issuance.
- Generally, no testing is required after the initial performance test for waived diesel fired generators.

#### Existing Natural Gas Fired or CBM Field Gas Fired Generators

Existing natural gas fired or CBM field gas fired generators with a valid air quality portable generator waivers issued prior to October 1, 2009, are authorized to continue operating in the eight county area in accordance with the requirements established in the original portable generator waiver.

- Portable natural gas generator waivers do not expire.
- Existing natural gas or CBM field gas fired generators above 400 horsepower with valid air quality portable natural gas generator waivers are authorized to operate up to twelve (12) months at one location. A WAQSR Chapter 6, Section 2 air quality permit is required to operate more than twelve (12) months and must be issued before the affected generator is on location for twelve (12) months.
- The Division's assigned ID number shall be clearly posted on each generator.

- Relocations of portable natural gas or CBM field gas fired generators in the northeast portion of the State are not currently tracked through the online system designed for diesel engines. Records shall be maintained documenting the location and duration of each relocation and be made available to the Division upon request.
- If 40 CFR part 60, subpart JJJJ applies to a generator engine, companies shall comply with all applicable requirements of 40 CFR part 60, subpart JJJJ. Additional requirements for generator engine(s) subject to Subpart JJJJ may include, but are not limited to, initial performance tests for each engine, annual emissions testing, additional catalyst monitoring and maintenance, and annual reporting.
- Existing engines are required to have NSCR and air/fuel ratio controls and document that for the NSCR and air/fuel ratio controls, the manufacturer's or supplier's recommended maintenance has been performed.
- Each natural gas or CBM field gas fired generator is required to be tested at least once every two (2) years of operation to demonstrate compliance with the established limits. The frequency of periodic emission testing is listed in each portable natural gas generator waiver.

#### New Natural Gas Fired or CBM Field Gas Fired Generators

- New natural gas or CBM field gas fired generators 400 horsepower and below are required to meet BACT, which is determined when a waiver is issued. Natural gas generator waivers do not require extensions. Operation at any one location is not time limited for generators 400 horsepower and below.
- New natural gas or CBM field gas fired generators above 400 horsepower with a valid air quality portable natural gas generator waiver are authorized to operate up to twelve (12) months at one location. A Chapter 6, Section 2 permit is required to operate more than twelve (12) months. An air quality permit must be issued before a unit is on location for twelve (12) months in order for the generator to continue operating beyond the allotted twelve (12) month time frame.
- Division's ID number shall clearly be posted on each generator within fifteen (15) days of initial start-up.
- Relocations of portable natural gas or CBM field gas fired generators in the northeast portion of the State are not currently tracked through the online system designed for diesel engines. Records shall be maintained documenting the location and duration of each relocation and be made available to the Division upon request.
- Each natural gas or CBM field gas fired generator will be initially tested to determine the NO<sub>x</sub> and CO emissions within ninety (90) days of waiver issuance date. VOC testing will be required for generator engines subject to VOC limits.

- Companies shall comply with all applicable requirements of 40 CFR part 60, subpart JJJJ. Changes in the permitting requirements for generator engine(s) subject to NSPS JJJJ may include, but are not limited to, initial performance tests for each engine, annual emissions testing, additional catalyst monitoring and maintenance, and annual reporting.
- Companies are required to document that for the NSCR and air/fuel ratio controls on each natural gas-fired generator, the manufacturer's or supplier's recommended maintenance has been performed.
- Each natural gas or CBM field gas fired generator is required to be tested at least once every two years (2) of operation to demonstrate compliance with the established limits. The frequency of periodic emission testing shall be determined in each portable natural gas generator waiver.